## Protecting Indiana's Coastal Waters

Today, more than 700,000 people live in Indiana's coastal counties- Lake, Porter, and LaPorte. Aside from aesthetics, Indiana's coastal waters provide homes for an amazing array of plants and animals and are recreational retreats for more than two million visitors per year.

Yet, high levels of bacterial pollution closed beaches or caused advisories in these three coastal counties 277 times in 2001. Rapidly increasing population growth and urban development along our state's coast could cause a higher frequency of future coastal water quality problems.

Many times the source of these coastal water quality problems is nonpoint source (NPS) pollution. Within Indiana, sources of NPS pollution include agricultural and urban runoff, faulty septic systems, marinas and recreational boating, physical changes to stream channels, and habitat degradation.

The Lake Michigan Coastal Program will develop the Coastal Polluted Runoff Program to strengthen coordination between federal and state coastal management and water quality programs and to enhance state and local efforts to manage land use activities that degrade coastal waters and habitats.

In cooperation with the IDEM, Purdue Cooperative Extension Service, and other stakeholders, the DNR will identify strategies to address coastal NPS pollution and coordinate public participation in the development of the Coastal Polluted Runoff Program. Several existing state programs work to address NPS pollution through voluntary partnerships. The DNR will work with these existing programs to develop specific goals for Indiana's coastal waters.

## Ways You Can Make a Difference

- **Place** all trash in receptacles; never throw down a storm drain.
- **Keep** roadways, street gutters, and walkways swept and clear of soil, grass, and debris.
- **Use** environmentally safe cleaning products that do not contain phosphorus or other toxic chemicals.
- **Recycle** all used motor oil by taking it to an authorized service station or local recycling center.
- **Direct** the flow of water, when washing your vehicle, into the grass or gravel. Never let it flow into the street gutters or storm drains.
- **Reduce** the amount of pesticides and fertilizers applied to plants and lawns.
- **Use** biological methods and traps to reduce insects, weeds, and fungus instead of toxic insecticides and herbicides. Never apply pesticides or herbicides near wells.
- **Plant** grass or other plants in exposed soil areas.
- **Inspect** your septic system annually; pump the septic tank every three to five years.

DNR
Indiana Department of Natural Resources

NOAA

INDIANA LAKE MICHIGAN COASTAL PROGRAM

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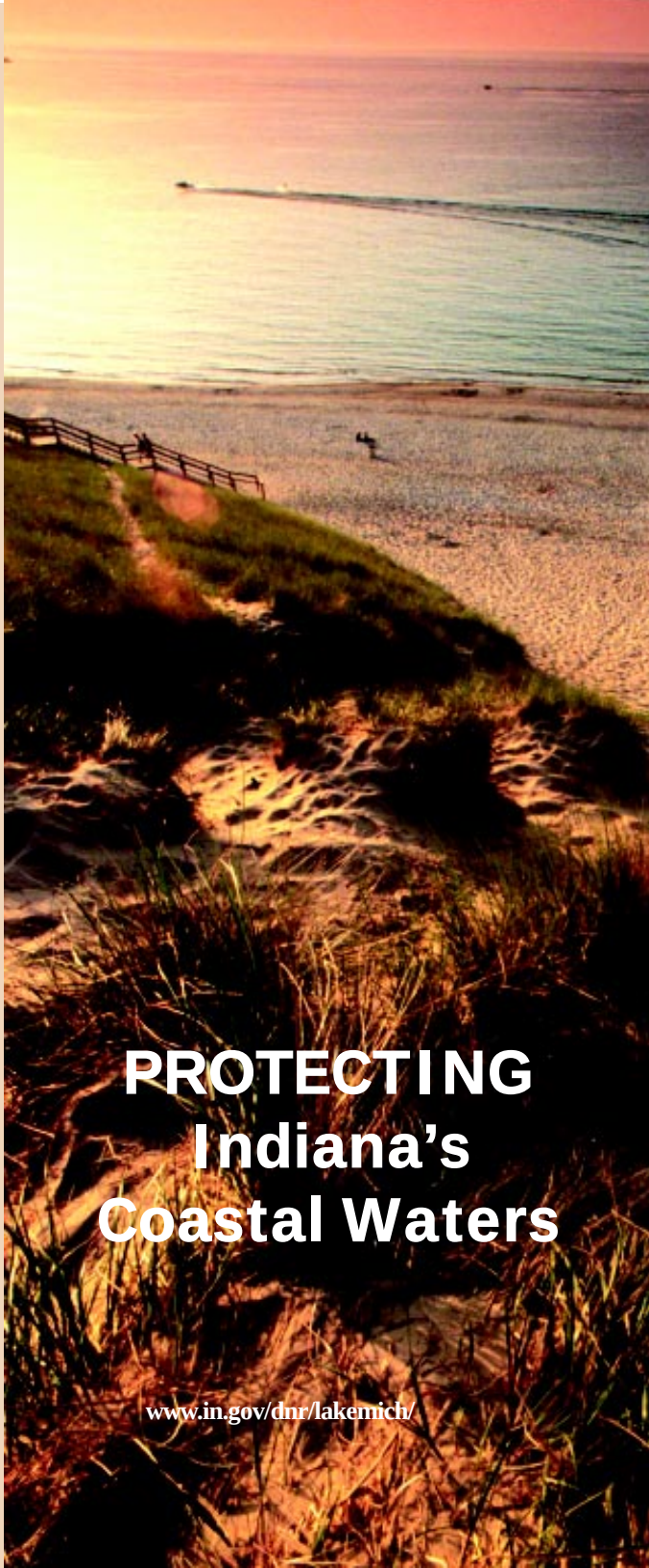

# PROTECTING Indiana's Coastal Waters

www.in.gov/dnr/lakemich/

## What is NPS Pollution?

Nonpoint source (NPS) pollution remains Indiana's largest source of water quality problems. NPS pollution is the main reason that many of the state's surveyed rivers, lakes, and coastal waters are not clean enough to meet basic uses such as fishing and swimming.

NPS pollution occurs when rainfall, snowmelt, or irrigation water runs over land or through the ground, picking up pollutants and sediment, and depositing them into rivers, lakes, and coastal waters or introducing them into ground water. NPS pollution is widespread and can occur any time activities disturb land or water.

Imagine the path a drop of rain takes from the time it hits the ground to when it reaches a river. Any pollutant it picks up on its journey has the potential to become part of the NPS pollution problem.

NPS pollutants cause several water quality problems. Excessive sedimentation clouds the water, reducing sunlight for aquatic plants, covers fish spawning areas and food supplies, and clogs the gills of fish. Excessive nutrients in the water cause rapid algae growth, reducing available oxygen needed by fish and other aquatic organisms. High bacteria levels in water make recreational contact with the water unsafe leading to summer beach closures.

## Common NPS Pollutants

The most common NPS pollutants are sediment and nutrients. These wash into water bodies from agricultural land and animal feeding operations, construction sites, and other areas of soil disturbance. Other common NPS pollutants include pesticides, pathogens (bacteria and viruses), salts, oil, grease, toxic chemicals, and heavy metals.

Since most NPS pollution is caused by land-based activities, each of us may be contributing to the pollution without even being aware of it.

## Agricultural Conservation

Throughout the United States, land managers observed, that when improperly managed, agricultural land can greatly affect water quality. Improperly managed agricultural activities that cause NPS pollution include confined animal facilities, grazing, irrigation, plowing, planting, pesticide spraying, fertilizing, and harvesting. The major agricultural NPS pollutants that result from these activities are sediment, nutrients, pesticides, and pathogens.

- Agricultural landusers can reduce erosion and sedimentation by 20 to 90 percent through the application of conservation tillage, buffer strips, nutrient management, integrated pest management, and alternative water sources for grazing livestock.

## Urban Conservation

Impervious surfaces, such as the pavement of a typical city block, generate nine times more runoff than a woodland area of the same size. Rapidly flowing runoff from storm sewers and roads empties NPS pollutants into streams, erodes adjacent streambanks, damages streamside vegetation, and widens stream channels. NPS pollutants transported in urban runoff include: oil, grease, road salts, nutrients, pesticides, and viruses and bacteria.

- Communities can reduce urban NPS pollution by planning new developments that minimize land disturbances, retain natural drainage and vegetation, and protect sensitive ecological areas such as wetlands; participating in plans to protect natural areas and restore degraded water bodies; inspecting, repairing, and pumping out septic systems at regular intervals; and providing public education on the importance of preventing urban NPS pollution.

## Clean Marinas

Thousands of people annually enjoy recreational boating within the state of Indiana and more than 21 marinas dot the coastline and coastal waterways. Individual watercrafts and marinas usually release only small amounts of pollutants. Yet, when multiplied by thousands of boaters, they can cause distinct water quality problems, including high toxicity in the water, increased erosion rates, decreased oxygen levels, and high levels of pathogens from the discharge of sewage and waste.

- Boaters can reduce NPS pollution by the use of a U.S. Coast Guard approved marine sanitation device and pumpout stations and by properly disposing of waste into approved shore side waste handling facilities.

The location and design of marinas are two of the most important factors impacting marina water quality. Water pollution from boating and marinas is linked to poorly flushed waterways, boat maintenance, discharge of boat sewage, and stormwater runoff from marina parking areas.

- Some simple design elements can greatly reduce NPS pollution from marinas including: minimizing paved surfaces next to the bulkhead where possible, use of the earth as much as possible as a natural filtration system with crushed stone paving, sand filters, wet ponds, grassy swales, and traps to catch solids from runoff; and installation of simple oil traps with absorption pillow and debris filters between the work areas and the bulkhead.

**Coastal Management–
Improving the quality of
our lives.**